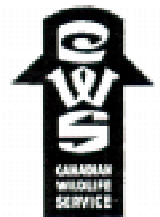
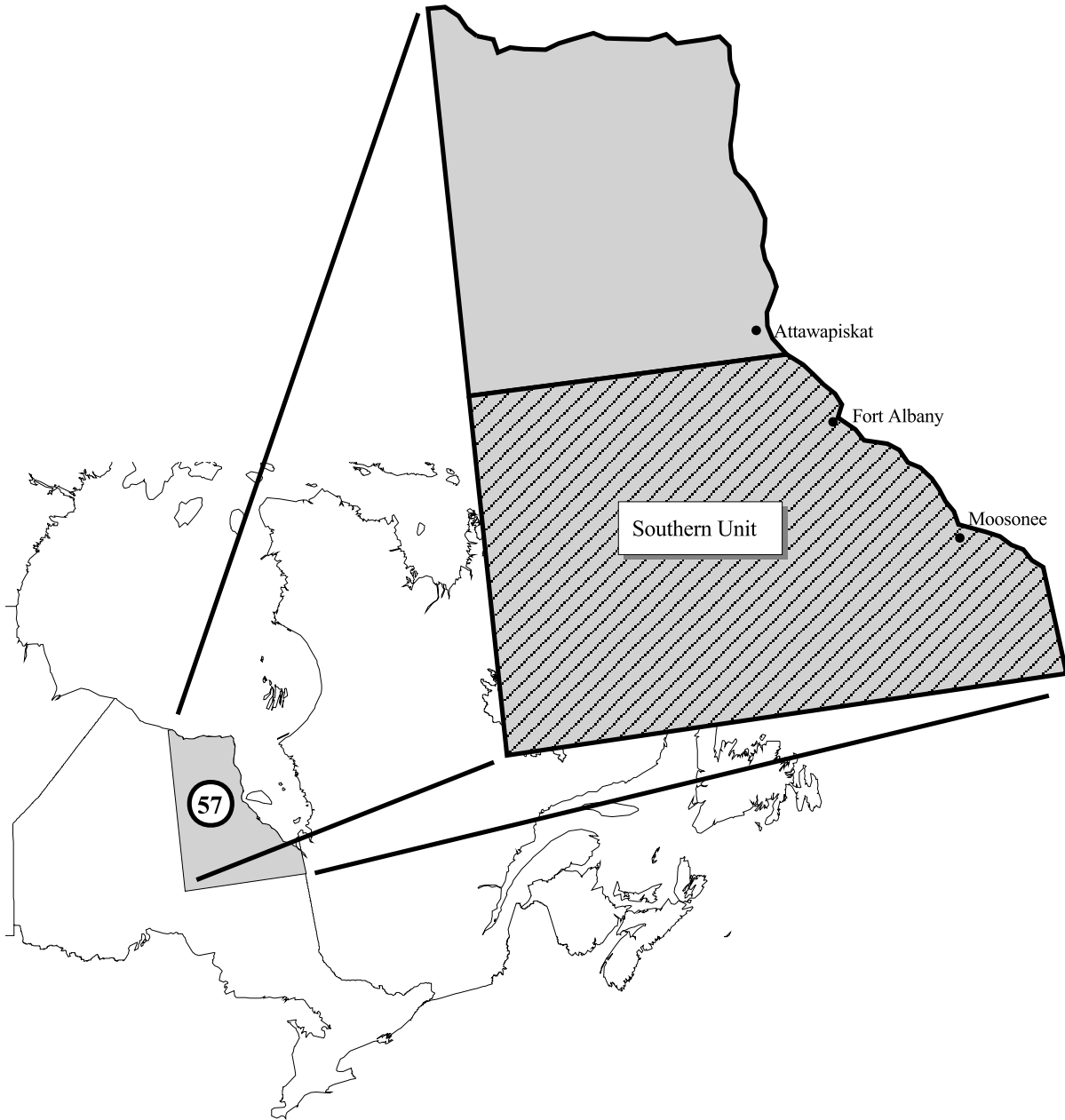


# WESTERN JAMES BAY LOWLANDS

## Experimental Waterfowl Breeding Population Survey 2001



## 2001 Waterfowl Breeding Population Survey Northeastern Ontario

### EXPERIMENTAL STRATUM

May 2001

Stratum Surveyed

57

Survey Conducted and Data Supplied by  
United States Fish & Wildlife Service

#### Aerial Crews

|                |  |
|----------------|--|
| Pilot/Observer | Mark D. Koneff, U.S. Fish and Wildlife Service         |
| Observer       | Charles Kitchens-Hayes, U.S. Fish and Wildlife Service |

#### Abstract

This stratum has been surveyed during three of the past twelve years in conjunction with the Black Duck Joint Venture to provide waterfowl breeding population estimates for northeastern Ontario to the south and west of James Bay. In contrast to recent warm and dry winters, this region experienced cold temperatures and significant snowfall during the winter of 2000-2001, resulting in generally good breeding habitat conditions. A warm and relatively dry spring provided conditions favorable for waterfowl production. Dabblers were not abundant. Divers were more abundant with good numbers of scaup, goldeneye, bufflehead, and particularly ring-necked ducks. No scoters or oldsquaw were observed. The estimate of breeding Canada geese was similar to that in 1992, but substantially below the 1992-1993 mean.

#### Methods

The procedures followed in conducting this survey are detailed in the Standard Operating Procedures for Aerial Waterfowl Breeding Ground Population and Habitat Survey, Section III, revised April 1987. A Partenavia P68 Observer aircraft was used for the survey. Visibility corrections were obtained using Bayesian updating procedures and pooled data from an ongoing helicopter visibility bias correction study being conducted in eastern Canada.

Since 1998, waterfowl and habitat data have been collected using an onboard digital recording system designed to attribute each waterfowl observation with a geographic location recorded in latitude/longitude. During data transcription, each observation is associated with pertinent information (i.e., stratum, transect, and segment, time, weather conditions, and geographic location).

Stratum 57 has been surveyed, or partially surveyed, 3 of the past 11 years, 1992, 1993, and 2001. All 6 transects have been surveyed only in 1993. Only 4 of 6 transects were flown in 2001 because fuel unavailability. The 1992, 1993, and 2001 population estimates in Table 2 correspond to the Southern Unit of Stratum 57. The Southern Unit is a subset of Stratum 57 containing transects 1 - 4. Estimates for the Southern Unit are presented for the sake of comparison among the 3 years that the survey has been conducted, since only transects 1 – 4 have been surveyed in all years. Additionally, because the stratum areas used in previous pilot reports were inaccurate, we present population estimates for the entire Stratum 57 for 1993 (Table 3). Visibility correction factors used in estimating populations in all 3 years are presented in Table 4.

### **Weather and Habitat Conditions**

Stratum 57: Terrain in this stratum varies from slightly rolling, elevated, and drier south of James Bay to the nearly flat, wet lowlands in western portions of the stratum. Well-developed river systems drain into James Bay in this stratum. Wetlands in the southeast consist primarily of smaller bogs and wooded wetlands. Large bogs and ribbed fens commonly referred to as “string bogs” constitute much of the western portion of stratum 57, corresponding to the James Bay lowlands physiographic region.

The winter of 2000-2001 in this region was cold with and good snow accumulations. Relatively warm and dry spring weather, in conjunction with improved wetland conditions, should favor waterfowl production in 2001.

Table 1. Survey design for Northeastern Ontario, 2001.

|                                    |          |
|------------------------------------|----------|
| STRATUM                            | 57       |
| <u>Survey Design</u>               |          |
| Square Miles in Stratum            | 69,302   |
| Linear Miles Sampled in Stratum    | 1188     |
| Number of Transects in Stratum     | 6        |
| Number of Segments in Stratum      | 66       |
| Expansion Factor                   | 233.34   |
| <u>Current Year Coverage</u>       |          |
| Square Miles in Stratum (So. Unit) | 42,382.5 |
| Linear Miles in Sample             | 900      |
| Number of Transects in Sample      | 4        |
| Number of Segments in Sample       | 50       |
| Expansion Factor                   | 188.37   |
| <u>1993 Coverage</u>               |          |
| Square Miles in Stratum (So. Unit) | 42,382.5 |
| Linear Miles in Sample             | 792      |

|  |          |
|--|----------|
| Number of Transects in Sample          | 4        |
| Number of Segments in Sample           | 44       |
| Expansion Factor                       | 214.05   |
| <u>1993 Coverage</u>                   |          |
| Square Miles in Stratum (Full Stratum) | 69,302   |
| Linear Miles in Sample                 | 1080     |
| Number of Transects in Sample          | 6        |
| Number of Segments in Sample           | 60       |
| Expansion Factor                       | 256.67   |
| <u>1992 Coverage</u>                   |          |
| Square Miles in Stratum (So. Unit)     | 42,382.5 |
| Linear Miles in Sample                 | 738      |
| Number of Transects in Sample          | 4        |
| Number of Segments in Sample           | 41       |
| Expansion Factor                       | 229.71   |

### **Breeding Populations**

Dabblers over all were not abundant. Mallard and American black duck estimates were 35.3% and 38.3% below their 1992-1993 means for the Southern Unit, respectively. In contrast, divers were more abundant with good numbers of scaup, goldeneye, bufflehead, and particularly ring-necked ducks. Goldeneye estimates were up 211.3% from the 1992-1993 mean, while bufflehead estimates were 930.6% higher. Ring-necked ducks were particularly abundant at an estimated 73.6 thousand birds, up 252.8% from the 1992-1993 mean. No scoters or oldsquaw were observed in 2001 on transects 1 – 4. The estimated number of breeding Canada geese was similar the 1992-1993 mean.

Table 2. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species with comparisons against 1992 and 1993 estimates for the western James Bay lowlands, Southern Unit.

| Stratum 57 (Southern Unit) |       |      |       |                   |                                 |
|----------------------------|-------|------|-------|-------------------|---------------------------------|
| Species/Ponds              | 2001  | 1993 | 1992  | 1992-1993<br>Mean | % Change From<br>1992-1993 Mean |
| Ducks                      |       |      |       |                   |                                 |
| Dabblers                   |       |      |       |                   |                                 |
| Mallard                    | 17.6  | 4.7  | 49.6  | 27.1              | -35.3                           |
| Am. black duck             | 6.5   | 0.0  | 21.2  | 10.6              | -38.3                           |
| Gadwall                    | 0.0   | 1.3  | 0.0   | 0.7               | --                              |
| Am. wigeon                 | 0.0   | 2.2  | 2.4   | 2.3               | -100.0                          |
| Am. green-winged teal      | 8.1   | 0.0  | 4.9   | 2.4               | 231.7                           |
| Blue-winged teal           | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| N. shoveler                | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| N. pintail                 | 0.0   | 0.0  | 2.4   | 1.2               | -100.0                          |
| Subtotal                   | 32.2  | 8.2  | 80.5  | 44.4              | -27.5                           |
| Divers                     |       |      |       |                   |                                 |
| Redhead                    | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| Canvasback                 | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| Scaups                     | 11.9  | 3.6  | 6.9   | 5.3               | 127.1                           |
| Ring-necked duck           | 73.6  | 30.3 | 11.4  | 20.9              | 252.8                           |
| Goldeneyes                 | 42.7  | 13.2 | 14.2  | 13.7              | 211.3                           |
| Bufflehead                 | 14.5  | 0.0  | 2.8   | 1.4               | 930.6                           |
| Ruddy Duck                 | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| Subtotal                   | 142.7 | 47.1 | 35.3  | 41.2              | 246.1                           |
| Miscellaneous              |       |      |       |                   |                                 |
| Oldsquaw                   | 0.0   | 0.0  | 0.9   | 0.5               | -100.0                          |
| Eiders                     | 0.0   | 0.0  | 0.0   | 0.0               | --                              |
| Scoters                    | 0.0   | 0.0  | 26.8  | 13.4              | -100.0                          |
| Mergansers                 | 7.3   | 6.1  | 6.9   | 6.5               | 12.4                            |
| Subtotal                   | 7.3   | 6.1  | 34.7  | 20.4              | -64.1                           |
| Total Ducks                | 182.2 | 61.5 | 150.4 | 106.0             | 71.9                            |
| Canada Goose               | 70.8  | 63.7 | 77.8  | 70.7              | 0.1                             |
| American Coot              | 0.0   | 0.0  | 0.0   | 0.0               | --                              |

Table 3. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species in 1993 for the western James Bay lowlands.

| Stratum 57 (Entire Stratum) |      |
|-----------------------------|------|
| Species/Ponds               | 1993 |
| Ducks                       |      |
| Dabblers                    |      |
| Mallard                     | 22.9 |
| Am.black duck               | 8.7  |
| Gadwall                     | 1.0  |
| Am. wigeon                  | 1.6  |
| Am. green-winged teal       | 2.8  |
| Blue-winged teal            | 0.0  |
| N. shoveler                 | 0.0  |
| N. pintail                  | 1.7  |
| Subtotal                    | 38.7 |
| Divers                      |      |
| Redhead                     | 0.0  |
| Canvasback                  | 0.0  |
| Scaups                      | 6.5  |
| Ring-necked duck            | 26.8 |
| Goldeneyes                  | 18.2 |
| Bufflehead                  | 0.5  |
| Ruddy Duck                  | 0.0  |
| Subtotal                    | 51.9 |
| Miscellaneous               |      |
| Oldsquaw                    | 0.0  |
| Eiders                      | 0.0  |
| Scoters                     | 3.6  |
| Mergansers                  | 5.5  |
| Subtotal                    | 9.1  |
| Total Ducks                 | 99.7 |
| Canada Goose                | 97.3 |
| American Coot               | 0.0  |

Table 4. Visibility correction factors by species and year used in waterfowl breeding population estimation for the western James Bay lowlands.

| Stratum 57            |      |      |          |
|-----------------------|------|------|----------|
| Species/Ponds         | 1992 | 1993 | 2001     |
| Ducks                 |      |      |          |
| Dabblers              |      |      |          |
| Mallard               | 2.84 | 3.65 | 1.941328 |
| Am. black duck        | 2.88 | 2.76 | 2.165301 |
| Gadwall               | 3.04 | 3.04 | 3.04     |
| Am. wigeon            | 5.24 | 5.24 | 4.529145 |
| Am. green-winged teal | 1.18 | 1.49 | 5.369232 |
| Blue-winged teal      | 7.43 | 7.43 | 10.31    |
| N. shoveler           | 3.48 | 3.48 | 3.49     |
| N. pintail            | 2.65 | 2.65 | 2.66     |
| Divers                |      |      |          |
| Redhead               | 3.11 | 3.11 | 3.11     |
| Canvasback            | 2.58 | 2.58 | 2.59     |
| Scaups                | 0.68 | 0.68 | 1.98     |
| Ring-necked duck      | 3.83 | 4.16 | 3.075554 |
| Goldeneyes            | 7.72 | 7.72 | 7.55     |
| Bufflehead            | 1.53 | 1.53 | 2.024379 |
| Ruddy Duck            | 5.94 | 5.94 | 5.94     |
| Miscellaneous         |      |      |          |
| Oldsquaw              | 1.99 | 1.99 | 1.99     |
| Scoters               | 1.27 | 1.27 | 1.45     |
| Mergansers            | 0.77 | 1.1  | 1.295425 |
| Canada Goose          | 2.73 | 2.73 | 2.722313 |
| American Coot         | 4.71 | 4.71 | 4.71     |